upon the geographic significance of the originating number, will also be impacted by location number portability.

OLNS is a planned feature for LIDB which will contain information describing any billing and service restrictions associated with the originating line, originating station type, presubscribed carrier information, and other applicable treatment indicators. Routing of OLNS queries is a concern in a permanent number portability environment. OLNS queries will be routed to the appropriate LIDB based on the NPA/NXX of the originating line.

Key to the success of any number portability alternative is general agreement within the industry on the format and content of LIDB queries and response messages. For example, will the ported number or the true number be launched by the OSS in the LIDB query? Will both numbers need to be stored in LIDB for billing or fraud management? It is unclear from any of the proposals how the addressing schemes or network architectures might affect the interaction of the LIDB with queries originating from the end office or the OSS. Routing schemes and network architectures proposed for call routing are irrelevant to the interface requirements for query routing, as long as a unique 6-digit code could be used to address the LIDB.

APPENDIX F

WIRELESS NUMBER PORTABILITY PRESENTS UNIQUE PROBLEMS AND ISSUES.

In developing a national number portability policy, the Commission must examine the impact on the wireless industry. The wireless industry presents unique problems for number portability analysis due to differences in current network technology, the mobile nature of wireless customers, and the heavy reliance on NPA/NXX blocks being assigned to a single wireless carrier. The differences between wireless service and wireline service and the unique burdens associated with implementation of wireless number portability prompted the Illinois Commerce Commission's industry workshop on number portability to disengage wireless number portability from the wireline number portability process. The workshop determined that its mission in the near-term would be to "develop, evaluate and recommend a wireline service number portability solution" with its long term mission being to "explore the desirability and feasibility of expanding wireline service provider number portability to provide number portability unencumbered by geography, service provider, service . . .".[1] The unique burdens associated with wireless number portability mandate that it be looked at separately to determine the "desirability and feasibility" and the impact such portability will have on the availability and affordability of wireless services.[2]

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[1]ICC NP Workshop Mission Statement.

[2]Id. However, the Commission and the industry also need to keep in mind that any number portability policy or proposal for

Almost anything in telecommunications may be "technically feasible" if enough time and enough money are devoted to development and implementation. The question is whether the perceived benefit would be worth the cost and any detrimental effect the implementation would have on existing services. Wireless number portability would require not only changes to the wireless carriers' networks but changes to established roaming standards and processes, all of which will carry a price.

A primary, unique concern associated with wireless number portability is the effect on roaming. Roaming describes the situation which occurs when the subscriber of one commercial mobile radio service (CMRS) provider enters the service area of another CMRS provider with whom the subscriber has no preexisting service or financial relationship, and attempts either to continue an in-progress call, to receive an incoming call or to place an outgoing call.[3] As the Commission has noted :

> Roaming capability is an increasingly important feature of mobile telephone communications. It is one of the attributes that prominently sets mobile telephony apart from landline service . . . We conclude that we should take any steps necessary to support roaming.

The availability of nationwide seamless roaming for the wireless customer is made possible by the existence of industry-wide roaming standards and a pre-existing relationship between the

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wireline must remain compatible with the wireless networks and possibly expandable to include wireless.

[3]See, In the Matter of Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services, CC Docket 94-54, Second Notice of Proposed Rule Making, para. 45 (Released April 20, 1995). ("Second NPRM 94-54").

CMRS provider he is a subscriber of (Home Carrier) and the CMRS provider whose service area he has entered (Serving Carrier). The efficiency of the current roaming system is premised on the fact that a NPA/NXX is normally assigned to only one particular CMRS provider.[4] In short, cellular carriers rely on the ability to identify a roaming cellular customer's Home Carrier by the NPA/NXX or a certain sequential block of numbers in a NPA/NXX.

In order to understand the impact the loss of reliance on the NPA/NXX being assigned to a particular carrier, it is important to understand how the roaming currently works. A mobile phone emits its assigned ten digit telephone number (referred to as its Mobile Identification Number or MIN) assigned by the carrier he has service with (i.e. Home Carrier) and the unique serial electronic serial number of the phone (ESN). The MIN/ESN combination emitted by the roaming phone is used for validation and billing purposes, along with routing purposes.

The NPA/NXX of the MIN (10 digit phone number) is used by the Serving Carrier for carrier validation purposes--to see if the Home Carrier has a valid roaming agreement with the Serving Carrier.[5] The NPA/NXX is used to determine the appropriate system id or SID, assigned by the Commission to the license holder of

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[4]In some instances CMRS providers may be forced to share a NPA/NXX code. In such instances each carrier is assigned a specific block of numbers for example one carrier may be assigned 214-618-0000 to 214-618-4999 and the other carrier will be assigned 214-618-5000 to 214-618-9999.

[5]Cellular carriers enter into reciprocal Intercarrier Roaming Agreements that provide the terms for provision of service, billing, settlement and division of revenue.

record (i.e. Home Provider's SID) and BID, which is an extension of the SID, assigned by CIBERNET for billing purposes. The Serving Carrier will use the MIN and SID to validate the roaming customer through the Home Carrier.[6]

Currently, the tasks of validation, billing and settlement associated with the roaming process work economically and efficiently because the Home Carrier is only required to give the industry notice of which NPA/NXX combinations it is assigned rather than having to notify the industry each time a customer activates service and is assigned a number.[7] For example, if Southwestern Bell Mobile Systems (SBMS) is assigned the 618 NXX in the Dallas 214 NPA, the industry can rely on the fact that any mobile phone emitting a 214-618-XXXX number is a SBMS Dallas customer. If service provider number portability is extended to wireless the entire industry will have to track the assignment of each individual phone number of each wireless customer. For example wireless carriers across the nation would need to know that 214-618-1234 is

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[6]Network connectivity between roaming partners is currently handled in one of three ways, through SS-7 backbone using IS-41, through a direct Switch-to-Switch connection using IS-41 or via clearinghouse through an X.25 connection that may or may not include IS-41 messaging. The amount of information sent to the Serving Carrier with the validation will depend upon the agreement of the parties, whether IS-41 messaging is used and the type of interconnection.

[7]Cellular carriers generally utilize an agreed upon clearinghouse (GTE TSI or EDS PCD) for settlement purposes. The industry billing standards titled Cellular Intercarrier Billing Exchange Records (CIBER) encompasses bill message format edits, negative file guidelines and tape processing. CIBER allows for smooth processing of the roaming call records for settlement and liability determination.

assigned to a SBMS customer, 214-618-1235 is assigned to a Metrocell Cellular customer, 214-618-1236 a SBMS customer and 214-618-1237 is assigned to a PCS provider. Further, a wireline customer of GTE may decide to transfer his number to his SBMS service, thus the industry would have to be able to identify a single ten digit number out of an entire NXX as being assigned to a SBMS customer.

Imposition of service portability between wireline and wireless providers will destroy the roaming process efficiencies associated with relying on a single NPA/NXX or block thereof being assigned to a single wireless carrier. Such portability will require development of new processes, data bases and standards to assure continuation of seamless nationwide roaming.

Service provider portability between wireline and wireless carriers will also require modifications to the Home Location Registers and Visitor Location Registers because the current data bases and memory utilization are not such that individual numbers can be ported. Current wireless networks are simply not technically capable of supporting number portability at this time.

The Commission needs to examine whether the benefit of such portability is worth the cost. The cost to wireless carriers and their customers will be great because the costs will include not only the costs associated with local portability but the costs associated with having to revamp the roaming process. The perceived benefit is that customers want to be able to keep their

phone number when switching from one wireless carrier to another or from landline to wireless or vis-versa and is willing to pay such costs. Such costs should not be forced upon wireless customers without a clear showing that there is a want and need for such portability. As the Commission recently stated it is "aware of customer concerns regarding the availability and pricing of roaming service and hope in that in the future, all CMRS providers will respond by implementing nationwide seamless roaming networks and by offering roaming service to interested subscribers at attractive, cost based rates".[8] Imposition of the costs of number portability in a wireless environment may be contrary to customers concerns and the Commission's stated goals.

Various wireless facilities based carriers have already indicated their concerns regarding wireless number portability in the Comments and Replies to the Second Notice of Proposed Rule-making in CC Docket 94-54.[9] The issues associated with wireless number portability are different than those associated with wireline portability and present unique problems. Further, nationwide seamless roaming requires a nation-wide solution--piece meal implementation of differing standards and procedures for local number portability will effectively eliminate the existence of

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[8]Second NPRM 94-54, para. 56.

[9]All citations are to CC Docket No. 94-54, Second Notice of Proposed Rulemaking (Comments filed June 14, 1995; Reply Comments filed July 14, 1995); Comments of SNET Cellular, Inc., pp. 18-19; Comments of Rural Cellular Coalition, p. 8; Comments of New Par, pp. 23-24; Comments of Cellular Telephone Industry Association, pp. 25-26; Reply Comments of New Par, pp. 17-18; Reply Comments of BellSouth, pp. 16-17; Reply Comments of SNET, pp. 14-17.

nation-wide roaming availability. If the Commission decides to pursue the possibility of service provider portability between wireline and wireless it should defer to industry committees to further define the issues, develop standards and determine whether such portability is technically feasible under practical circumstances.